Florida House of Representatives

2007-2008 Interim Project

Request for Agency Chief Information Officers Council to Assess Agency Compliance with s. 119.01(2)(d), F.S., and to Identify and Recommend Best Practices to Facilitate Improved Free Access to Public Records, Data and Information.

Committee on Audit and Performance
Representative Ed Homan, Chairman
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A Note Regarding Project Format - This interim project report consists of two parts. The first part was prepared by committee staff to discuss the project's purpose and methodology while the second part consists of an attachment which is the response of the Agency Chief Information Officer's (CIO) Council to the request that was the substance of the project's review.

Background

Subsection 119.01(2)(d), F.S., specifically addresses the policy of the state with respect to governmental use of proprietary software and its affect on access to public records. It provides that "[s]ubject to the restrictions of copyright and trade secret laws and public records exemptions, agency use of proprietary software must not diminish the right of the public to inspect and copy a public record." This particular provision of statute was enacted in 1995 as part of legislation intended to address then existing public accessibility concerns arising as a result of increasing governmental use of electronically created and maintained public records.[1] A joint legislative committee looking into these accessibility issues also heard public testimony questioning whether the statutory definition of "public records" included "data processing software" and email.[2] The legislation, HB 1149, which ultimately passed that year expressly extended the state's general policy of open access to public records to electronic records, and incorporated "data processing software" and other clarifying amendments to the definition of a public record. Slightly revised versions of key provisions of HB 1149 are now found in s. 119.01(2), F.S. Currently these provisions read as follows:

> a) Automation of public records must not erode the right of access to those records. As each agency increases its use of and dependence on electronic recordkeeping, each agency must provide reasonable public access to records electronically maintained and must ensure that exempt or confidential records are not disclosed except as otherwise permitted by law.
>
> (b) When designing or acquiring an electronic recordkeeping system, an agency must consider whether such system is capable of providing data in some common format such as, but not limited to, the American Standard Code for Information Interchange.
>
> (c) An agency may not enter into a contract for the creation or maintenance of a public records database if that contract impairs the ability of the public to inspect or copy the public records of the agency, including public records that are online or stored in an electronic recordkeeping system used by the agency.
>
> . . .
>
> (e) Providing access to public records by remote electronic means is an additional method of access that agencies should strive to provide to the extent feasible. If an

[1] . Ch. 95-296, Laws of Florida.
[2] . Joint Committee on Information Technology Resources.

> agency provides access to public records by remote electronic means, such access should be provided in the most cost-effective and efficient manner available to the agency providing the information.
>
> (f) Each agency that maintains a public record in an electronic recordkeeping system shall provide to any person, pursuant to this chapter, a copy of any public record in that system which is not exempted by law from public disclosure. An agency must provide a copy of the record in the medium requested if the agency maintains the record in that medium, and the agency may charge a fee in accordance with this chapter. For the purpose of satisfying a public records request, the fee to be charged by an agency if it elects to provide a copy of a public record in a medium not routinely used by the agency, or if it elects to compile information not routinely developed or maintained by the agency or that requires a substantial amount of manipulation or programming, must be in accordance with s. 119.07(4).

Even prior to HB1149's passage, however, longstanding case precedent had clearly established that "[t]here can be no doubt that information stored on a [government] computer is as much a public record as a written page in a book or a tabulation in a file stored in a filing cabinet." [3]

Problem Statement

Currently, some agencies store data and documents in computer file formats that are only electronically accessible to the public through the use of vendor specific software, however, the extent to which this is taking place has not been the subject of any formal evaluation or assessment by the individual state agencies. Despite the apparent strong language of s. 119.01(2)(d),F.S., ". . .use of proprietary software must not diminish. . . ." there are no means by which this mandate can be enforced to ensure compliance. Although technically the agencies are not "violating" this provision as long as the electronic record can be printed and a hardcopy provided to the requestor, it is consistent with the state's policy expressed in s. 119.01(2)(e) that agencies strive to provide the public with remote electronic access to such records to the fullest extent feasible in the most cost-effective and efficient manner available to the agency.

Also, when data is shared across agency jurisdictional lines it is typically shared in formats that are inconsistent from one agency to another. In addition, all agencies use predominately one vendor specific computer operating system which carries with it an average computer hardware refresh cycle of approximately 3 to 4 years for all state agencies. The feasibility of using an open (non-proprietary) operating system and the possible extension of time between computer hardware refresh cycles has not been evaluated for feasibility or cost savings by the various agencies.

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[3] . Seigle v. Barry, 422 So.2d 63 (4th DCA, 1982).

Further, as agencies purchase upgrades and higher line computers with new software applications, access to older documents, information and data, is not consistently preserved and is frequently incapable of integration, migration or use by computers with newer systems, diminishing the public's capacity to access information and documents stored under previous formats of vendor specific software which has become obsolete or discontinued by the vendor.

The Scope of the CIO Council Response to the Requested Review.

Shortly after receipt of the project request by the CIO council members, the council met and discussed the scope of the interim project. Concerns were raised about the depth of each agency's review and their development of feasible, cost-effective and practical recommendations in the time period provided for the project. In response to initial questions raised by members of the CIO council regarding the parameters and scope of the requested review, committee staff developed suggested guiding principles for the council to utilize in evaluating agency compliance with s. 119.01(2)(d) and in developing their recommendations for the project. After a second meeting between committee staff and the CIO council steering committee members held in August, the consensus among the steering committee members was that the council could develop both short term and long term recommendations in connection with the project. Steering committee members indicated that a more practical and effective means to formulate a response to the project would be to reply to specific information requests.

Methodology

During the course of coordinating the CIO council response to the requested review, committee staff developed the following guiding principles for purposes of the council's review:

Principle I.

Access to public records and documents should be broadly available to the public regardless of the particular type of software used by government agencies to create and store the documents.

Principle II.

Public records and documents should be electronically stored in a manner that will allow the public the ability to inspect and copy a public record without exclusively requiring a specific brand of computer operating system or software program application.

Principle III.

Computer hardware and accessory refresh cycles should be governed by the needs of the agencies to fulfill their respective missions and to get the maximum feasible lifespan of computer system and software purchases.

Principle IV.

System upgrades and acquisitions must not render access to public records and documents impossible, impractical, or contingent upon the purchase of a particular computer operating system, software application or upgrade on the part of the public consumer.

In order to identify compatibility, public access, and "ease of use" issues with public records published on agency websites, committee staff randomly surveyed the websites of every state agency targeting those sites believed to be more frequently accessed by the public. Our survey of agency websites uncovered some examples of public accessibility problems. Specific concerns with respect to these problems were provided to the members of the steering committee. The specific concerns identified were:

1. Exclusive use of proprietary software to access public records such as WinZip or Excel. The public seeking access to public records should not be required or encouraged to purchase a particular software product. Winzip, for example, is not a free software.

2. Exclusive reliance on trial versions of proprietary software for access to public records means that after the trial period expires the person will be unable to access records stored in the same format in the future absent a purchase of specific software. Further, at least one agency's website instructs it readers to "agree" to the licensing requirements of the trial software in order to download it. It is not recommended that agencies provide advice to the general public on whether to agree or not agree to any private company's licensing requirements.

3. Some records may be incompatible with computer operating systems widely available to the public. For example, some downloadable files available from an agency website were not compatible with Macintosh or Apple computer systems.

4. MP3 and windows media files are proprietary and cannot be accessed with systems using a default Linux (Open Source) installation.

5. The need to provide access to public records in proprietary formats for current convenience to the majority of present day viewers should not lock the agency or the public into dependency on a particular or exclusive software vendor in perpetuity. Moreover, current user convenience in using proprietary software does not obviate the need to store data and records in a standardized format in order to preserve it and sustain its accessibility in the future by various forms of available software.

6. Agency websites using proprietary (non-standard) HTML extensions may not be viewable by free web browsers that can run on free operating systems. Internet Explorer, for example, will not run on free operating systems.

Along with these principles and specific concerns provided to the steering committee members, the following specific information requests were submitted for purposes of the CIO Council response to the project request:

1. An evaluation of the extent to which agency use of vendor specific software to store data and documents restricts access to inspect and copy public records. Included in this evaluation should be consideration of the impact, if any, that agency computer and software upgrades have reduced agency and public access to older documents, information and data preserved in previous file formats.

2. Identify impediments to, and the feasibility of, a requirement that agencies store data in a standardized format to increase the ability of agencies to share data across agency lines.

3. Assessment of the feasibility of using open operating systems in order to extend the period of time between computer hardware refresh cycles.

The CIO Council response to the requested review commences on the next page.

December 07, 2007 Findings

Agency Chief Information Officers (CIO) Council Review of Compliance with Section 119.01 (2)(d), Florida Statutes

at a glance

Florida's Open Government laws establish the public's right to have access to government meetings and government records. There is concern that State agencies are not meeting the intent of Article 1, Section 24 of the Florida Constitution and Section 119.01, Florida Statutes regarding access to public records. In order to address these concerns, the CIO Council will review how the utilization of "Open Source" may increase the public's access to government records as well as help drive down the cost of Information Technology (IT). Although "open source" has a lower initial cost, agencies have not evaluated the total cost of ownership or the ability of the "open source software" to perform as well as the software it is replacing. As a result, the CIO Council was asked to review and make recommendations concerning these issues.

Scope

In keeping with the current responsibilities of the Agency Chief Information Officers Council to enhance communication among the Agency Chief Information Officers by identifying and recommending efficient best practices among state agencies and the Council's present objective to build consensus and develop policies to facilitate cooperative planning between state government entities and maximizing information sharing for the public access, the House of Representatives, Committee on Audit and Performance has requested the members of the council to review and assess the following:

- Agency compliance with s. 119.01 (2) (d), Florida Statutes under current agency technology systems.
- Impediments to the ability of each agency to comply with the requirements of s. 119.01 (2) (d), Florida Statutes.
- Increase the ability of agencies to save and store agency internal and public documents, as well as all forms of data collected, in a non-proprietary standardized format capable of being shared among and between each respective agency and in a manner that will facilitate the broadest possible free electronic public accessibility.
- Extending the duration and feasible use of computer hardware, hardware upgrades, accessories, and software and identifying ways to reduce the frequency of computer hardware refresh cycles among all agencies of state government.

Upon further clarification the scope of the project has been refined to the following requested information:

1. An evaluation of the extent to which agency use of the vendor specific software to store data and documents restricts access to inspect and copy public records. Included in the evaluation should be consideration of the impact, if any, that agency computer and software upgrades have reduced agency and public access to older documents, information and data preserved in previous file formats.
2. Identify impediments to, and the feasibility of, a requirement that agencies store data in a standardized format to increase the ability of agencies to share data across agency lines.
3. Assessment of the feasibility of using open operating systems in order to extend the period of time between computer hardware refresh cycles.

Background

Public Records (History – Office of the Attorney General, Department of Legal Affairs Website)
Florida began its tradition of openness back in 1909 with the passage of what has come to be known as the "Public Records Law," Chapter 119 of the Florida Statutes. This law provides that any records made or received by any public agency in the course of its official business are available for inspection, unless specifically exempted by the Legislature. Over the years, the definition of what constitutes "public records" has come to include not just traditional written documents such as papers, maps and books, but also tapes, photographs, film, sound recordings and records stored in computers.

Throughout the history of Florida's open government, its courts have consistently supported the public's right of access to governmental meetings and records. As such, they also have been defining and redefining what a public record is and who is covered under the open meetings law. One area of public concern was whether or not the Legislature was covered under the open meetings requirements. To address these concerns, a Constitutional amendment was passed overwhelmingly by the voters in 1990 providing for open meetings in the legislative branch of government.

The Attorney General's Office then drafted a definitive constitutional amendment, the successful passage of which in 1992 not only guaranteed continued openness in the state's government, but also in effect reaffirmed the application of open government to the legislative branch and expanded it to the judiciary.

Florida voters have overwhelmingly showed their support for government in the sunshine at all levels of government. They have made it clear they believe that open government provides the best assurance of government that is responsive and responsible to the needs of the people.

Definitions

The following definitions were obtained using a tool called Wikipedia. Wikipedia is a multilingual, web-based, free content encyclopedia project. The information contained in their website is written collaboratively by volunteers from all around the world

Client Side - client-side refers to operations that are performed by the client in a client-server relationship.

Typically, a client is a computer application, such as a web browser, that runs on a user's local computer or workstation and connects to a server as necessary. Operations may be performed client-side because they require access to information or functionality that is available on the client but not on the server, because the user needs to observe them or provide input, or because the server lacks the processing power to perform the operations in a timely manner for all of the clients it serves. Additionally, if operations can be performed by the client, without sending data over the network, they may take less time, use less bandwidth, and incur a lesser security risk.

Data Exchange - Data exchange is the process of taking data structured under a source schema (diagram) and actually transforming it into data structured under a target schema, so that the target data is an accurate representation of the source data. Data exchange is similar to the related concept of data integration except that data is actually restructured (with possible loss of content) in data exchange.

Open Document - The Open Document format is a file format for electronic office documents, such as spreadsheets, charts, presentations, databases and word processing documents (e.g.: memos, reports, letters).

The standard was developed by a technical committee of the Organization for the Advancement of Structured Information Standards (OASIS) consortium and based upon the Extensible Markup Language (XML) format originally created and implemented by the OpenOffice.org office suite. The Open Document standard meets the common definitions of an open standard, meaning the specification is freely available and implement-able.

Office Open Extensible Markup Language - Office Open XML (commonly referred to as OOXML or Open XML) is an XML-based file format specification for electronic documents such as spreadsheets, charts, presentations and word processing documents. The specification was developed by Microsoft as a successor of its binary office file formats and was handed over to Ecma International to be published as the Ecma 376 standard in December 2006.

Open Source - Open source is a set of principles and practices that promote access to the design and production of goods and knowledge. The term is most commonly applied to the source code of software that is available to the general public with relaxed or non-existent intellectual property restrictions. This allows users to create software content through incremental individual effort or through collaboration.

The open source model of operation can be extended to open source culture in decision making, which allows concurrent input of different agendas, approaches and priorities, in contrast with more centralized models of development such as those typically used in commercial companies. Open source culture is one where collective decisions or fixations are shared during development and made generally available in the public domain, as done in Wikipedia. This collective approach moderates ethical concerns over a "conflict of roles" or conflict of interest. Participants in such a culture are able to modify the collective outcomes and share them with the community. Some consider open source as one of various possible design approaches, while others consider it a critical strategic element of their operations.

Open Standard - An Open standard is a standard that is publicly available and has various rights to use associated with it.

The terms "open" and "standard" have a wide range of meanings associated with their usage. The term "open" is usually restricted to royalty-free technologies while the term "standard" is sometimes restricted to technologies approved by formalized committees that are open to participation by all interested parties and operate on a consensus basis.

The term "open standard" is sometimes coupled with "open source" with the idea that a standard is not truly open if it does not have a complete free/open source implementation available.

Open Systems - Open systems are computer systems that provide some combination of interoperability, portability, and open software standards. (It can also mean systems configured to allow unrestricted access by people and/or other computers; this article only discusses the first meaning.)

The term originated in the late 1970s and early 1980s, mainly to describe systems based on Unix, especially in contrast to the more entrenched mainframes and minicomputers in use at that time. Unlike older legacy systems, the newer generation of Unix systems featured standardized programming interfaces and peripheral interconnects; third party development of hardware and software was encouraged, a significant departure from the norm of the time, which saw companies such as Amdahl and Hitachi going to court for the right to sell systems and peripherals that were compatible with IBM's mainframes.

The definition of "open system" can be said to have become more formalized in the 1990s with the emergence of independently administered software standards such as The Open Group's Single UNIX Specification.

Proprietary Software - Proprietary software (also called non-free software) is software with restrictions on using, copying and modifying as enforced by the proprietor. Restrictions on use, modification and copying are achieved by either legal or technical means or sometimes both. Technical means include releasing machine-readable binaries to users and withholding the human-readable source code. Legal means can involve software licensing, copyright, and patent law.

Public Domain - Public domain comprises the body of knowledge and innovation (especially creative works such as writing, art, music, and inventions) in relation to which no person or other legal entity can establish or maintain proprietary interests within a particular legal jurisdiction. This body of information and creativity is considered to be part of a common cultural and intellectual heritage, which, in general, anyone may use or exploit, whether for commercial or non-commercial purposes. Only about 15 percent of all books are in the public domain, and 10 percent of all books that are still in print.

Record (Data) Format/Structure - a data structure is a way of storing data in a computer so that it can be used efficiently. Often a carefully chosen data structure will allow the most efficient algorithm to be used. The choice of the data structure often begins from the choice of an abstract data type.

Server Side - Server-side refers to operations that are performed by the server in a client-server relationship in computer networking.

Typically, a server is a software program, such as a web server, that runs on a remote server, reachable from a user's local computer or workstation. Operations may be performed server-side because they require access to information or functionality that is not available on the client, or require typical behavior that is unreliable when it is done client-side.

Findings and Recommendations

Question 1

Request
An evaluation of the extent to which the agency use of vendor specific software to store data and documents restricts access to inspect and copy public records. Included in the evaluation should be consideration of the impact, if any, that agency computer and software upgrades have reduced agency and public access to older documents, information and data preserved in previous file formats.

Finding
Software used to store documents and data is designed to meet the requirements of the agency for managing the documents and data internally. Such software does not necessarily have any bearing on how the agency makes documents or data available to the public.

A distinction can be drawn between storing and providing access to raw data (e.g., text, graphics, etc.) and the look and feel of that data (e.g., Rich Text, markup, etc.). Agencies are capable of converting data stored in their computer systems into a format that does not require proprietary software (e.g., American Standard Code for Information Interchange or ASCII Text format, Portable Network Graphics or PNG, etc.). However, agencies do not have the capability to perform this task, other than creating an actual hardcopy or print file, if both data and look-and-feel formatting attributes are required. The reason agencies do not have these capabilities is that nationally recognized non-proprietary standards are not in place.

This issue is in flux on both a national and international scale. The attached Gartner Research Note indicates that the Massachusetts State Government has chosen the Microsoft-backed Office Open Extensible Markup Language (OOXML) while other public entities have adopted the competing Open Document standard (See Appendix A.) Another attached Gartner Research Note (the 'Hype Cycle for Content Management 2007') indicates that the OOXML specification and the Open Document specification have not reached the "plateau of productivity" and are probably not ready for adoption (See Appendix B.)

Additionally, mandating changes to proprietary products that support the internal storage and use of documents and data within an agency would not be economically feasible, just from a raw conversion standpoint. Presently, agencies have many cost effective options available to extract data and documents from proprietary systems in order to meet the requirements for

inspection and copy of public records. Such solutions do not require the massive conversion of internal proprietary systems. At the very least, documents or data made available to the public should not require the purchase of proprietary software by the recipient.

Recommendation

The focus of this request should relate to how documents and data are made available to the public, rather than how they are maintained and stored internally within the agency. Formats and structure for records made available to the public should be done so in such a manner that access to the information can be done with software and tools that are readily available within the public sector which includes public domain software (free) and proprietary products that are pervasive within the public sector.

The agencies recognize the need for a solution to the problems identified in this request but believes that it would be premature to adopt a standard before an industry-wide national standard has been established. Until a common standard can be developed, agencies should focus on establishing a process to convert older documents into newer more usable formats and on ensuring the ability to produce existing data and information in ways that do not require the use of proprietary software.

This issue is being studied around the world; perhaps the Legislature would consider funding one of Florida's institutes of higher learning to join this worthwhile international effort.

Question 2

Request
Identify impediments to, and the feasibility of, a requirement that agencies store data in a standardized format to increase the ability of agencies to share data across agency lines.

Finding
There is no currently known problem that impedes one agency from sharing data with another when required by law. Agencies are currently sharing data with each other, the general public, and other governments and institutions. As noted above in the first inquiry, how agencies store and manage data internally has no bearing on how data is shared with outside entities. However, data sharing is typically done with restrictive formats that are not consistent from agency to agency. Data labeling and definitions are inconsistent from agency to agency and could lead to misinterpretations.

Recommendation
The state should adopt a standard for data exchange among state agencies. This should not require changes to how data is stored or maintained internally. The state standard should be aligned with industry standards to ensure eventual compatibility with other governments and institutions for data exchange. The state should invest in looking at metadata standards relating to data classification and lexicons in order to establish a common data vocabulary for data that exist in multiple state agencies.

In addition, the CIO Council recognizes that although agencies can meet their statutory obligation, improvements can be made to enhance data sharing and data exchange between agencies. The CIO Council will continue to review possible improvements in this area.

Question 3

Request
Assessment of the feasibility of using open operating systems in order to extend the period of time between computer hardware refresh cycles.

Finding
As a general rule, operating system software has a minimal impact on requirements for hardware refresh cycles. The most significant driver to hardware refresh requirements are customer applications that continue to embrace new technologies that improve application performance and function. Application enhancements are fueled by technological advancements in both hardware and development software that promote substantial improvements in reliability, maintenance, and capabilities.

This approach does not apply to operating systems involved in server-side computing. In these environments, the hardware upgrade cycle is mainly dictated by the applications (e.g., Enterprise Resource Planning or ERP software, databases, etc.) Linux and other open source operating systems are currently only competitive in business data processing environments on the server-side. Thus, it is unlikely that such a move would yield tangible benefits in a server-side data processing environment.

This approach may yield some benefits in client PC systems, but the issue of application availability becomes an issue. Client-side operating systems are 95.9% of the worldwide market share is Windows based as shown in the attached Gartner research note (See Appendix C.) Thus, the availability of applications on the client-side has limited the use of open source operating systems in those environments.

Recommendation
Hardware refresh cycles are needed to maintain current technology and allow the state to maintain its significant investment and dependability in technology to support the state's most important business functions. Hardware refresh cycles always have been, and always will be, driven by rapid changes in hardware and software capabilities. The state should look to industry standards to adopt appropriate hardware refresh criteria (see Appendix D) and make appropriate funding available to ensure the refresh cycles can be maintained in order to avoid deterioration of our mission critical technical infrastructure.

Conclusion

Conclusion
The Council recommendations are as follows.

1. Until a common standard can be developed, agencies should focus on establishing a process to convert older documents into newer more usable formats and on ensuring the ability to produce existing data and information in ways that do not require the use of proprietary software.

2. The state should consider adopting a standard for data exchange among state agencies.

3. The state should look to industry standards to adopt appropriate hardware refresh criteria and make appropriate funding available to ensure the refresh cycles can be maintained in order to avoid deterioration of our mission critical technical infrastructure.

Additionally, the Council believes at this time that there would be no benefit to state government adopting a policy on open source operating systems in order to reduce hardware refresh cycles. The market is dynamic and as it changes, the world and state government will change with it. In conclusion, state government agencies should employ proprietary and open source operating systems as the circumstances warrant.

Appendix A

Gartner Inc.
Title: Approval of OOXML by Massachusetts Advances Microsoft's Open-Format Position
Author: Michael A. Silver
Publication Date: 28 August 2007
ID Number: G00150928
Page 1

After some debate, the Commonwealth of Massachusetts has decided to add Ecma's Office Open Extensible Markup Language (OOXML), originally developed by Microsoft, to the list of open formats that can be used by Massachusetts' government. Had the Commonwealth excluded the format, other governments in the U.S. and worldwide might have done the same, which would have been bad news for Microsoft.

Key Findings

- File formats are important, but the applications that support them, the levels of support and the appropriateness of applications for groups of users determine, in large part, which products can be used and who can use them.
- Microsoft has sought to bring OOXML into standardization, and this decision rewards that effort.

Recommendations

- Expect interoperability among formats to improve; however, differences will remain, especially for application integration. Ensure that the format you select gives you the interoperability you require.
- Select applications based on the formats required; however, when selecting formats, be aware of the applications and functions that users require.

(Distribution approval of the above document to support the references made in the CIO Council's response to the Florida House of Representatives was granted by Gartner to the CIO Council on 9/18/2007.)

Appendix B

Gartner Inc.
Title: Hype Cycle for Content Management
Authors: Mark R. Gilbert, Karen M. Shegda, Rita E. Knox, Michael A. Silver, Gene Phifer, James Lundy, Toby Bell, Kenneth Chin, Donald Feinberg, Nikos Drakos, David Newman, Ted Friedman, Carolyn DiCenzo, Lou Latham, Debra Logan, Whit Andrews, David Gootzit, John Bace
Publication Date: 6 July 2007
ID Number: G00148578
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Hype Cycle Phases, Benefit Ratings and Maturity Levels

Table 1. Hype Cycle Phases

Phase	Definition
Technology Trigger	A breakthrough, public demonstration, product launch or other event that generates significant press and industry interest.
Peak of Inflated Expectations	During this phase of "over enthusiasm" and unrealistic projections, a flurry of well-publicized activity by technology leaders results in some successes, but more failures, as the technology is pushed to its limits. The only enterprises making money are conference organizers and magazine publishers.
Trough of Disillusionment	Because the technology does not live up to its over-inflated expectations, it rapidly becomes unfashionable. Media interest wanes, except for a few cautionary tales.
Slope of Enlightenment	Focused experimentation and solid hard work by an increasingly diverse range of organizations lead to a true understanding of the technology's applicability, risks and benefits. Commercial, off-the-shelf methodologies and tools ease the development process.
Plateau of Productivity	The real-world benefits of the technology are demonstrated and accepted. Tools and methodologies are increasingly stable as they enter their second and third generations. Growing numbers of organizations feel comfortable with the reduced level of risk; the rapid growth phase of adoption begins. Approximately 20% of the technology's target audience has adopted or is adopting the technology as it enters the Plateau.
Years to Mainstream Adoption	The time required for the technology to reach the Plateau of Productivity.

Source: Gartner (July 2007)

(Distribution approval of the above document to support the references made in the CIO Council's response to the Florida House of Representatives was granted by Gartner to the CIO Council on 9/18/2007.)

Appendix C

Gartner Inc.
Forecast: PC Market by Operating System, Worldwide, 2001-2010 (Executive Summary)
Authors: Annette Jump
Publication Date: 3 May 2006
ID Number: G00139385
Page 5

Table 2. Worldwide: PC Installed Base by OS by Region, 2006

	Asia\Pacific		Latin America		United States		Western Europe		Worldwide	
	Units	Market Share (%)	Units	Market Share (%)	Units	Market Share (%)	Units	Market Share (%)	Units	Market Share (%)
Windows 95, 98, 98SE, ME	3,778,173	2.1	6,667,449	10.1	15,964,558	6.0	11,948,720	6.3	51,196,257	5.8
Windows NT4	463,642	0.3	794,094	1.2	1,132,422	0.4	2,369,205	1.2	6,278,190	0.7
Windows 2000 Professional	23,536,171	13.3	10,160,717	15.4	48,639,260	18.4	33,038,352	17.4	146,650,456	16.6
Windows XP Professional	66,813,274	37.8	20,842,614	31.6	97,427,878	36.8	67,059,326	35.3	331,710,374	37.6
Windows XP Home	77,451,474	43.8	26,066,745	39.5	88,521,552	33.4	66,764,851	35.1	309,204,490	35.1
Windows Vista Professional	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0
Windows Vista Home	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0
Linux	3,452,966	2.0	873,041	1.3	1,935,097	0.7	3,833,700	2.0	14,625,941	1.7
Mac OS	1,286,739	0.7	544,869	0.8	11,344,949	4.3	4,966,385	2.6	21,524,391	2.4
Total	**176,782,438**	**100.0**	**65,949,529**	**100.0**	**264,965,716**	**100.0**	**189,980,538**	**100.0**	**881,190,098**	**100.0**

Source: Gartner Dataquest (April 2006)

(Distribution approval of the above document to support the references made in the CIO Council's response to the Florida House of Representatives was granted by Gartner to the CIO Council on 9/18/2007.)

Appendix D

Hardware Refresh Cycles

Hardware refresh cycles are driven by several factors, however the main goal driving these refresh cycles is to avoid interruptions in service, loss of data and loss of employee time. Changes in hardware, software and demand all play an important role in this cycle.

Demand for government services can vary for several reasons especially in State Government. Licenses, payments and permission can be cyclical and seasonal. For example, state licenses that have to be renewed by a certain date tend to overload a system the closer it comes to the renewal date. The system hardware that supports the government services is expected to handle the increased volume at the highest peak in service demand.

Software that supports these government services needs to be updated and maintained. Over time, the software vendor will stop support on the older versions and patches forcing the owner to move to the latest supported version. This move may require a change in the operating system, hardware or both.

If the hardware can survive changes in demand and software upgrades, there are other hardware related factors that influence the refresh cycle.

Figure 1 - Hardware Refresh Cycle

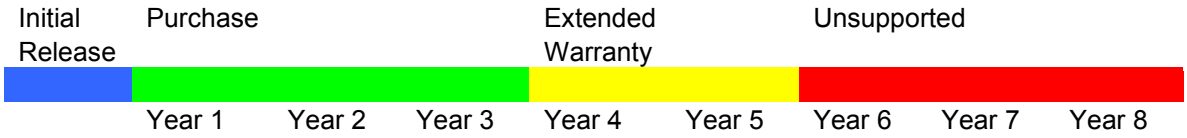

Figure 1 above applies to both PC and server replacement. The “Initial Release” indicates the initial release of the hardware. Since most agencies are not early adopters of hardware, there is a time that a product has been on the market before state agencies purchase that hardware model. Most agencies will purchase their hardware with a 3 year maintenance agreement for support. Once the 3 years is over, additional hardware maintenance can be purchased. Normally this is 2 years. Depending on the product, there is a possibility that the hardware manufacturer will no longer support the hardware after the 5th or 6th year. This could result in an agency having severe difficulties responding to hardware failures.

In addition, there are times that the hardware becomes unreliable before the warranty period has expired. Even though the repairs are covered under the warranty, the impact on the business for recurring downtime justifies the replacement for the hardware.

Appendix E

Open Source Discussion

Chief Information Officers' Council Steering Committee and
Harold Schomaker – City of Largo Florida

Statement: (Harold Schomaker)

- The city of Largo uses a majority of Open Source Software and has adopted the Open Document Format for documents used in City Government.
- In order to make their website more accessible, they use as much open source software on their website as possible. They do use a content management solution to generate HTML code so anybody with any type of web browser should be able to view the documents.
- The City's primary goal of using Open Source in Open Government is to not have citizens incur an expense to access government documents.
- If the City has documents that they do not want to be altered, a PDF document format is used. While the ODF is used for internal documents.
- Open Source Software – The Open Office suite is used city wide. The only time Microsoft is used is to open Microsoft Office 2007 compatible documents.
- Firefox is the City's standard web browser. Harold has required every service contract that they enter, allow for the support of the Firefox web browser. The Firefox web browser can create a problem when accessing other governmental agencies.
- The City tries to use Open Source Standards so that citizens in the future will be able to open documents in the future.

Discussion: (responses are summarized not verbatim)

Did you convert from Microsoft to an Open Source Format?

No, the City moved from a Unix environment to the Linux.

"Here are the top three things to look out for in migrating to Open Source."

Open Source software (infrastructure) is growing very fast and loads very easy. It works well over all 3 platforms. This was not the case when it first came out. Harold was lucky that he had staff who were actively involved in the Linux Community. However, the Open Source applications have not matured. Their e-mail application was originally an Open Source application but Novel bought them out and now the development is much slower to resolve any issues. So Open Source is used more as infrastructure support. Thin clients devices (not PCs) are used at the desktop and pushed out by the network. This limits the end users by allowing the IT staff to lock down the desktop. The City can operate at 250 to 300 sessions running at one time off of a server. This gives them the ability to install once and push it out to all of their users.

There are approximately 750 end users and 550 devices. There are 33 servers that make up their datacenter.

Biggest daily challenge is Open Office vs Microsoft Office. A majority of the users coming in off of the street can not use all of the functions of Open Office they send them to a 4hr training class and provide them on-line tutorials.

There are times that the Open Office can not run any of the Visual Basic programs on the desktop.

The City is not opposed to running proprietary software if it will run in the open environment.

The City is not completely a 100% Open Source Shop. Their police laptops and applications run on a Microsoft Platform.

This adventure may take 3-5 years to take a small agency to this point.

If you are to start going down this path, start with the Open Office in sections of your agency that do not have power users.

Because a majority of their computers run off of thin client, all of the City's documents are stored at the server level. This limits the security costs and antivirus protection needs.

How does Open Source affect your refresh of hardware?

Harold mentioned that it does not have any affect. He refreshes his front line servers every 3 years and rotates the servers down until they are disposed of every 5-6 years.

The Content Management Solution has 508 A limitations.

From a PC replacement standpoint, there is an 8-10 year refresh. This is because the City is not running PCs but rather the hardware is similar to a dumb terminal. This small piece of hardware allows the end user to connect to the server and load the client software. A majority of the City's employees work out of a city owned facility which provides them a high speed connection and a short network span. (State agencies are statewide and some employees work remotely so this solution is not compatible given the State's limitations.)

Can Microsoft Products open the Open Document Format?

No a third party vendor is writing it for them.

Harold said that he is only concerned with trying to write to the Open Document Format.

Open Office can output PDF documents if this feature is desired.